While still somewhat in its infancy, IP-enabled services are rapidly becoming a fixture as a tele-communications platform. Today, as we focus on the unlimited potential, we want to make sure we keep in mind the issues that address persons with disabilities.

The first individual we are honored to have with us today is Cary Barbib, who joined Galludet University Technology Access Program, or TAP, in 2001 as a Senior Research Engineer.

His current research areas include assessment and applications of digital video communications, wireless telecommunications, and text or VoIP.

He has been an active member of the technical incubator of the Alliance of Telecommunications Industry Solutions TTY Forum. It is my pleasure to introduce Cary.

MR. BARBIB: Thank you. Okay, thank you for having me here today. I'm going to talk about some opportunities I see in relationship to VoIP or IP-enabled services, the IP world, we'll call it.

And some of you, you know, we can talk about some of the opportunities for growth in the future and areas that we can make improvement in. One is video,

as you know.

Video is becoming a hot thing on the internet. The people can do video-conferencing from far away places all over the planet. It is very nice. You can feel like you're right there in the same room with somebody, and you can talk to your parents or whoever it is you would like to speak to.

Video relay services is an available service now throughout the United States and some other countries as well. And that's a nice service that we have available to the deaf community to enable quick and equivalent communication in phone calls with the use of interpreters.

But there is a lot of room for improvement and a lot of growth in the technology that's used there. For example, I envisioned that we could see the interpreter and the person that we are speaking with, the hearing person, so it's a three-way conference-call, so we can all see each other, just as if we were all sitting in the same room together.

That would be a nice feature to be able to have. That applies to conference-calls, forums, and various types of usages where you can, you know, people are talking with the interpreter, and, you know, you can be able to see the interpreter and know

what's being said and keep up with them.

It also affects quality of service issues. One are where I've noticed that video sometimes lacks is the frame rates that you get if the internet is very busy or something.

Then we suffer from that because of the ability to get quality of service through the speed of our internet connection based on the number of users and the internet speeds that are being used at that particular time.

It does bring us up to more of a functional equivalency level with a regular phone. You know, the interpreter is able to operate at a much quicker speed and much more fluently and fluidly.

Broadband in the deaf community is somewhat equivalent to a dial-tone for hearing people, because being able to have that opportunity to use, you know, video services, and being able to see somebody on the screen that perhaps you could lip-read while making a phone call that's a video-conference phone call.

And those hard-of-hearing users could be able to hear and also use lip reading to be able to enhance their phone experience. Being able to use video services, you know, video on demand for people is an extremely popular thing at this point in time.

And being able to have captions for phone calls, you know. It would help not only deaf and hard of hearing people, but hearing people in general, you know, because if you're in a noisy area or something like that, you could see the captions and be able to still understand what the person is saying.

If you are on an airplane or if you are in a bar where there's, you know, it's a noisy environment, and captions are giving hearing people access to the communication as well as deaf and hard-of-hearing people.

Another area would be the language of choice. So for me, if I would like to chose, you know, I would like to use sign language, or if I want to hear what the conversation, or if I want to have captions for the conversation, then it gives us functional equivalency and options.

You know, I can also maybe have both. Maybe if I don't catch something the interpreter says but there's simultaneous captioning of what the hearing person says, I can then, you know, catch the exact wording of what has been said for a particular conversation.

These services also give us choice, and allows us to have preference. And the technology

needs to tie everything together. And that's the next ting I'd like to speak about, is the opportunity there.

Have on-demand translations, you know, where we have interpreters in different languages, you know, between a deaf and a hearing person just with the click of a button we can connect to an interpreter for a different language, a sign language interpreter, a French interpreter, a Spanish interpreter or whatever, that is needed so that anybody can connect to each other and do that without barriers of language impeding.

Also mobile-IP applications like cell phones, pagers, and other devices that are used. That family of devices currently, you know, I can use my text pager to contact people from wherever I am.

You know, I'm not limited to where there's a payphone TTY or if I carry a TTY around with the cell phone. But, you know, now I'm untethered in what I can do with the wireless applications that are out there.

And that's great. But there are still issues there that need to be addressed as well. It would be nice if we had IP text messaging, so that that message could be received anywhere by any device,

that every device supported that text-messaging, so that people could immediately connect to each other and be able to communicate through that mode.

It especially applies to 911 call centers, the PSAPs. If I could connect to that PSAP through my, you know, text pager without having to use a phone and a TTY.

You know, currently a cell phone requires a separate TTY to be carried around. So there's two devices. And if you forget your TTY, my cell phone then becomes worthless for calling 911 or calling relay because I can't get a hold of them.

They don't know where I am. They don't know, you know, who's making the call. There's issues to be addressed there. But if everything could be incorporated into, you know, where text is a possibility everywhere, then I could page 911 and get responses.

And I wouldn't have to go through a third-party vendor for that. Also, in relation to calling 911, I think it would be nice that if we called 911 it would automatically be able to connect to video interpreters, you know.

When I'm using internet services that automatically the software would recognize that I need

to connect to an interpreter, and those interpreters would be available for those emergency calls.

Location is important as well. You know, we need to be able to use GPS devices or technology incorporated within text pagers to be able to identify our location so that the 911 call centers know exactly where I am when I'm making this call or sending this message.

And that's the same technology that needs to be used for 911 centers connecting through the internet for video calls, using interpreters. The other thing is that we need to have an open platform, a platform with interconnectivity for all devices, not certain clients only connecting with each other, but an open platform so that everybody can take advantage of the devices that they have, and use those.

And open platform allows people to use their own software and be able to have developers continually developing that software, and improving it.

Technology is very important, especially as we move into the IP world to make sure that everything is functionally equivalent so that we can stop using some of the old technology that we are currently stippled with.

And it prevents the fraud and barriers that we face as well. Thank you very much.

MR. SNOWDEN: Thank you Cary. Next up all the way from Sweden is Gunnar Hellstrom, who specializes in accessible telecommunications and information technology.

He is the founder of Omnitor, a Swedish company devoted to consulting, product development, and implementing solutions in this area. Thanks for joining us Gunnar.

MR. HELLSTROM: Thank you, it is a pleasure to be here. I want to speak about a title I called accessibility raised to the power of three. The three are the media that we need to include in the calls now, when we have a chance.

Voice Over IP technology gives us very good opportunity to improve the personal communication. We can leave the inaccessible voice-telephony behind and include more media in the calls, including more people in the calls.

We can have video. Video can be used for a lot of things, for sign language, for lip reading, for recognition, for feelings, for showing things. Text character by character just as on the TTY, but with better speed and two ways, can be used for

conversation, for addresses, and other exact information, for numbers, for spelling, and so on.

And voice, as e are used to, is also used, of course, for the conversation part. But if we include these three we open for a lot of opportunities and we establish services that would give very lot of benefits for us all and people with disabilities.

And we have a little picture with a possible user interface for this kind of communication with three media in the call. It is sign language and text in the bottom and also the possibility to have voice.

And that's the focus on what we should go with. One good example is the benefit for deaf/blind users. If you can -- you have many kinds of deaf/blind users.

But this one on the picture here is using sign language out, but can't perceive sign language in. So therefore she has a device where you get the text in and it comes out onto a Braille display.

So it is the same communication for all kinds of situations. And you can in that way open communication for all. Another example is between deaf and hearing persons.

If you don't go the relay, if you want to have direct communication, you need to go down to text

for the main conversation. But the video will give you the opportunity to see each other, to acknowledge and recognize, and show things, and so on.

So, you can combine a lot of situations like this, and find that the video, text, and voice combination is really the thing that opens the communication world.

The picture here is a small computer with this kind of multimedia, total conversation application. It's connected to the 3G phone, in this case, so you go mobile with it.

The more wide-spread we get this new telephony, the more benefit it will be, of course, for all. And here is what you can do. With IP you have the good benefit that you have many kinds of access, many kinds of connection.

And you can use the same protocols. You can have wired connections in your office or your home. Or you can connect these mobile telephones. You can have wireless LAN in private or public settings.

You can have 3D wireless connections. And you don't need to always be on multimedia. You can also do subsets like the video phone, with only video and voice.

You can do voice phones, you can do text

phones with the same protocols you get interoperability. And, talking about interoperability you also need to be interoperable with the old world, the telephones and the text phones, the TTYs.

And that has to be done through gateways into the old telephone network. And we should not forget to also link in the relay services. And one important reason to arrange for interoperability with the telephone network is for emergency access where we need to link the new way of doing text in IP with the old way of doing text on the TTYs.

So, voice gateways and text gateways are needed to connect this world. We cannot do this in an efficient way if we don't apply standards. And that's an area where I have been working quite a lot, to reach a reasonable good state currently with standards.

And we can achieve interoperability if we promote one preferred set of standards as the main ones. It seems that the text medium is the part that is usually lagging behind, or not getting that much implementation.

I would prefer that we can agree on using SIP for the goal as a preferred set of default standards, and then video, and T.140 for text, and

audio standards.

And if we, as much as possible, go with these standards we will have easier to make interoperability. There is quite good situation. Many standards boards are working on this idea.

ITU, ETSI, TIA, all are working and know what each other are working with in this field. And it's the text part that needs to be checked, that it follows the pace of the others.

But it's a good situation. And we have the impact. Well, Paul will tell you more about the standards. We have to put the user in the center so you give one terminal to the user.

It can be different makes, different kinds. They must use the same protocol so that you can get interoperability, and the user can use the same terminal to access voice users, text users, signing users, text relays, and video relay services, and emergency.

And I would like all to join in this implementation of personal communication for all. That will benefit us if we harmonize it. Thank you.

MR. SNOWDEN: Thank you very much Gunnar. The next panelist will be Harold Salters. Harold is the Director of Federal Regulatory Affairs for T-

Mobile USA, with responsibilities for various technical and operational issues, including interconnection, infrastructure access, network reliability, interoperability, digital TTY, and Section 255 implementation. Thank you, Harold, and welcome.

MR. SALTERS: Thank you, Dane. Good morning everyone. Thanks for coming. As our previous panelists have indicated, it's so important that we add the mobility dimension to IP-enabled services.

Adding this dimension is crucial to accessibility. It's important to note that although we talk a lot about future requirements, that mobile data devices today offer accessibility opportunities here and now.

And as noted, for instance, mobile data devices liberate individuals from the whatever inconvenience of the portable TTY hookup to the cell phone.

And, indeed, a significant portion of the market for handheld devices is the deaf and hard-of-hearing communities. I'd like to just show you for a moment some of T-Mobile's hand-held offerings.

Up there we have the Blackberry 7230, a very popular device both in the business community and in

person communities as well. Next up we have the T-Mobile Color Sidekick, a very popular device in the deaf and hard-of-hearing communities.

It features AOL instant messenger is already loaded directly onto the Sidekick desktop, and in addition to text messaging and email. And also we have the Trio 600, which is an integrated PDA device, again, offering email and text.

It's important to note that a significant portion of the demand for these devices are the deaf and hard-of-hearing community. And also, that these devices work as an important bridge between the IP layer and the public switch telephone network.

As we saw from the example of Gunnar's cloud PowerPoint, it's very important that there be connectivity. Indeed T-Mobile is investigating multiple versions and options of IP relay services that would be free to the end user, specifically for the Sidekick.

So, again, this offer is an important bridge between legacy applications and future applications. Further, T-Mobile offers the Hotspot WiFi, which offers laptop connectivity to the internet.

What I would urge all of us to keep in mind is that, as we address these issues, is that we need

to maintain a forward looking focus on IP and accessibility issues.

Right now there is a great deal of standards work going on in the international community, and domestically as well, on making those things happen, as Gunnar has alluded to.

I'm also proud to note that one of my colleagues, Jim Nixon from T-Mobile, is Chairman of the NRIC VII Focus Group on long term 911 issues. The network reliability and interoperability council's focus for the upcoming two year term is going to be on precisely 911 issues.

And I think it's so important that those issues are being highlighted. That would Focus Group 1B. It's also important that we make the public safety community aware of the need to implement instant messaging access to 911.

Not only to PSAPs (Public Safety Answering Points) have to have PSTN connectivity, they have to have IP connectivity as well. It is encouraging that a number of public safety agencies are integrating today standards-based IP functionalities into their overall public safety communities systems in order to enhance their own interoperability and efficiency.

The challenge before us is to get the public

safety community to also recognize that this ongoing IP work needs to also be done to enable text and instant messaging access to 911. Thank you very much.

MR. SNOWDEN: Thank you very much, Harold. Next we will have Tom Wlodkowski who is Director of Accessibility at America Online. In this role he drives employee awareness of issues that prevent full access to the internet and the development and implementation of requirements and technological solutions to enhance the accessibility of AOL products and services to people with disabilities. Welcome Tom.

MR. WLODKOWSKI: Thank you. It is my pleasure to be here today. Before we get into looking at opportunity, it seems to me that one of the things that we really aught to do is take a look at where things are currently today, in terms of how we are leveraging IP.

Certainly mobility seems to be the underlying theme throughout the panelists' presentations. And I couldn't agree more with that. Untethering individuals with disabilities from PCs where they have traditionally had access to access technologies.

You know, when I go to traveling down to my,

you know, parents house or whatever, I don't always have the laptop with the access technology. So what we really want to do, then, is make sure that there are IP-enabled solutions that will allow someone, for example, to access their email without need of a screen reader, if you are talking about someone who is blind or visually impaired, and making sure that an individual who is deaf can get instructions, driving directions, using mobile devices.

Today AOL has a few different services that we believe provide this mobility. AOL by phone is a phone based email system that is available today where you can read, reply, and initiate an email message simply by recording a voice message.

That message is then sent to the recipient's mailbox and they can either pick it up through the traditional means of accessing email through their PC, but they can also, you know, call AOL by phone and hear the message that way.

Again, we believe that is an experience that brings folks away from total reliance on the PC to benefit from the most popular feature today on the internet, email.

AOL for Broadband over the past six months recently launched streaming closed captions on select

video content, as did our KOL service, and online channel that is target for kids six to twelve.

Today kids can log on and watch a ten episode cartoon series titled Princess Natasha with closed captions. The captions are off by default, and there's a little button on the video window where they can enable the captions.

AOL for Broadband is streaming six daily feeds of a CNNJ Quickcast, which is a three minute news stream produced and provided by CNN. What we do there is use some automated technology that can actually take the script of the newscast and sync it up with the video.

And we are able to deliver in an automated fashion these six daily streams. Automation is critical, particularly where, at least from where we stand, in that media shops are relatively small, particularly in the internet space, where we are a content aggregator.

And so we are dealing with multiple partners. And much of the content is produced exclusively for streaming only. And so some solutions were done in the area of automation and ways of syncing text with video would certainly be welcomed.

And we'd be happy to be a part of that

environment. Looking ahead, certainly AOL Instant Messenger has recently announced and launched video capability.

So it is now possible for individuals with a webcam to get into a video chat, as aim is pervasive throughout many devices, from the PC through mobile devices, as you just heard, available on the T-Mobile Sidekick device.

Looking at how we can leverage instant messaging to enhance accessibility. And the immediate concept that comes to mind is using instant messaging as a gateway to relay and video relay services.

And we are now actively looking at ways of doing this with relay partners and hope to have announcements in this area very shortly. Again, looking for partners is the best way to advance these solutions.

So I want to just, in closing, thank the folks here at the FCC for assembling this panel. And I feel that certainly a Voice Over IP is an emerging technology, and hope to use the remainder of the day to learn actually more than what we can present now, and hope that we can come back in years to come with a continuing brightening picture, thank you very much.

MR. SNOWDEN: Thank you, Tom. Next Paul

Jones from SYSCO Systems. Paul has been involved in research and development of protocols and systems architectures in the area of multimedia communications including voice, video, and data conferencing over IP networks. Welcome Paul.

MR. JONES: All right, thank you. Just to let everybody know, I was a little bit late getting my presentation to the FCC. So we did not have Braille copies available.

If anybody needs a copy in Braille, let me know and I will get that to you. So, a lot of people so far during this session have been talking about the things that we need to do.

And certainly there still are a lot of things that we do need to do. But I will, I guess, put a little bit more positive spin on things. We are doing things.

We are doing a lot of stuff. So the topic of my presentation is on total conversation through ITU and IETF standards, and specifically sign-type speak.

You Decide, is the title. So as you know, the TTY was introduced roughly in 1964. And that device really opened up communications for the deaf and hard-of-hearing. It allowed them, for the first

time, to be able to communicate with people over a telephone that, in the past, had been limited only to people who had hearing ability.

So the introduction of the TTY really changed things for the deaf. And things really didn't progress too much beyond the introduction of the TTY. Since that time, the TTY device has stayed basically with the same technology.

Different countries around the world have adopted different protocols. And they have tried to make improvements on the TTY device. And Mr. Hellstrom in the panel here was one person who has tried to do a significant amount of work to try to improve on the TTY device.

But I do think we have a unique opportunity with IP to make a huge step forward. So part of the work that I have been doing for quite a while now has been focused on multimedia conferencing, specifically things related to voice, video, and text integration.

I have been doing that within the ITU and the IETF. And I think that, if you bring these things together, you will better enable everybody to communicate, not only the people that are deaf or blind, but everybody.

And I think that's the ultimate goal. We

want to have total conversation as part of our communications experience. So the ITU had defined a set of multimedia service specifications.

The ITU then set out and -- actually in parallel -- also defined multimedia conferencing protocols, most notably H.323, H.320, and H.324. And those different protocols have different applications basis.

But they are largely interoperable. The IETF worked on the protocol called SIP, which is not quite as interoperable as some of the H.300 series protocols, but is a multimedia protocol intended for use over IP networks.

So one of the issues I think that we faced early on was that those multimedia systems were focused on voice and video. In fact, they were focused on room-based video conferencing systems.

So, when the IP came along, -- I think it was about the mid 90's when IP really started to take off around the world -- people started looking at turning this into a Voice Over IP technology, not just a room-based video-conferencing technology.

And there was not a focus on text, per se. So the ITU took the task to try to raise awareness on accessibility issues. We focused on the needs of

improving video for sign language.

We also started to add things to the multimedia protocols to support text properly. So, again, Mr. Hellstrom worked on T.140, which is a very important piece.

This allows us to actually relay text, or to send text between multimedia systems. The IETF RFC 2793 is a document that describes how to take T.140 and transport T.140 over an IT network between two systems.

H.323 and SIP both can utilize that protocol. So there's an ongoing initiative at the moment called ToIP, or Text over IP. And the focus of this is to allow the bridging of two PSTN networks.

This is to allow character by character communication, which is the preferred mode of communication, allow simultaneous two-way conversation, along with voice and video.

There are inherent limitations with the existing PSTN. Obviously we can't do simultaneous voice, video, and text if we are also interworking with the PSTN.

But it is an important component to be able to do the PSTN interworking. And we have a standardized character set based on Unicode, so all

languages of the world are supported.

We want to support all of the TTY devices that exist today. So we don't want to leave somebody with a legacy device behind moving on to an IP network.

We want to enable different device types to communicate to each other. This is actually a barrier internationally. People from one country to another can't communicate with their TTY devices.

We are going to try to figure out a way to remove that barrier with IP. And we want to enable the legacy PSTN devices to communicate with all the newer devices.

So there's a link on my slide deck to a website that I have been creating. It's not fully fledged out, but it has some information on ToIP. There's RFC, I mentioned, 2793, which describes how to convey Text over IP.

And you will see on this slide here we have a V.21 device in UK talking to a Baudot device in the United States. RFC 2793 can serve as the bridge for that.

We also have along with us the ability to bring in additional devices. We can have endpoints that are PCs, endpoints that are IP phones bridged

with endpoints are traditional TTY devices, everything interconnected over the IP network.

There are some numbers on this slide that talk about the number of users who are using Instant Messaging short messaging system. Those are actually forecast numbers, looking at the years 2006, roughly in that time frame.

But you can see that text is going to be a very, very important component. So the ultimate goal is total conversation, to all text, to be able to work with voice video, and allow everybody to communicate. Thank you.

MR. SNOWDEN: Thank you very much Paul. Tom said something that I thought was very striking. He said he also wants to learn. And that's something that we here at the FCC want to do.

And before we open it up to questions from the audience to the panelists, I wanted to ask the panelists a question. And if each of you want to take it, or some of you, or none of you -- hopefully one of you will.

As we at the FCC evaluate the policy approach that we should take for VoIP, what do you consider to be the most critical issue that we consider as we go forward?

And then what is the solution that you see in your mind, if there is one at this point, that should be thought through here at the FCC? And I will open it up to anybody who wants to take that first. Harold?

MR. SALTERS: Thanks Dane. That is an excellent question. I think that I would say to the FCC that the most important thing is to keep a forward looking focus.

And, although it is important to have a bridge between the legacy technology and the future technology, I think the focus has to be more on the future, rather than the specifics of the linkage between legacy and IP.

So I would say that to focus on the specifics of it would probably detract from the future focus.

MR. SNOWDEN: Thank you, anyone else? Gunnar?

MR. HELLSTROM: Be encouraging, invent regulatory measures that are encouraging, stimulating for the industry in some way, not that much chasing and punishing.

Be international. Look at what voice telephony is internationally. You can call anywhere

with voice. And we need to have the same thing with accessible communication.

MR. SNOWDEN: So if I understand you correctly, you are saying get out of the way?

MR. HELLSTROM: Did I?

MR. SNOWDEN: Make sure that we don't inhibit the growth the IP related services?

MR. HELLSTROM: No, but you can really act positively and be encouraging, buying services, buying development.

MR. SNOWDEN: All right. Harold.

MR. SALTERS: Dane, just to elaborate on what -- to follow up on what Gunnar said, I think he made an excellent point when he said don't chase and punish.

And I think that is -- I think in looking in terms of future regulation, it should be more of an enablement focus, than an enforcement focus, per se.

MR. SNOWDEN: Anyone else on the panel want to address that before I open it up? Cary?

PARTICIPANT: Again, I think that the FCC needs to spend more of a focus of emergency access. I mean, in the IP world we -- the emergency world and the IP world are not really connected.

And we need to look at what technologies are

available so that we can make these kind of quick calls. So we need to think especially about the PSAPs and how to get them connected.

I mean, there are other areas of improvement needed. But I feel in particular the emergency services needs to be tied in so that we can, you know, pull people away from the TTY.

Because, up to this point, they are still tied to the TTY in an emergency. But if we are talking about functional equivalence, we want to untether them.

So we would like to move faster in that particular arena.

MR. SNOWDEN: Thanks Cary. Other comments from the panel before I open it up? Any questions from the audience here? Yes, sir. If you could remember to state your name.

MR. BAILEY: All right, thanks for having us here, it is a great show at the FCC. My name is Bruce Bailey. I am with the U.S. Department of Education. We have be actively migrating the VoIP almost entirely for cost savings reasons.

And it has gone very, very well. And one of the things that has gone well is the accommodations that we are providing to our employees that are deaf

or blind.

We have very good TTY access. We are very pleased with how the progress is going so far. And if there is anyone here that wants to contact us to ask about that, we would be more than pleased to share our progress.

My question is really for Cary Barbib, or maybe for Harold Salters. We are also using a lot of the Blackberry, so Mr. Salters showed us the Blackberry.

So my question is can you speak to if the accessibility of the Blackberry, in terms of access for people with mobility impairments, TTY access, or some other equivalent facilitation for folks who are blind, because that's an update probably on any of those accommodations at this point?

And then for Cary, I was wondering kind of along the same lines, why don't you think there's been a consumer TTY sell device at this point? I mean, it seems to me at this point cell phones are so inexpensive, market forces should be able to support a cellular TTY. Thank you very much.

MR. SALTERS: Thanks, I will take that, the first Blackberry question there. I think with the Blackberry and with all the data devices, the

compelling application is text itself.

And it's just very liberating. I've seen estimates, for instance, from the Sidekick, that ten percent of the market for the sidekick is exclusively people who are deaf or hard-of-hearing.

And that's amazing, in an area of the economy where things don't tend to be market-driven. It's really remarkable that you have, you know, ten percent of the market being persons with disabilities.

So I think in terms of going forward it has to be, with the Blackberry and the other devices, it has to be can you contact the 911 PSAP? And I think the concept of equal access and functional equivalency brings us to the imperative to get the public safety communities, which are using VoIP the same way the Department of Education is to rationalize and better their internal processes, to take some of that VoIP and focus it externally at how citizens and consumers can contact them using those IP-enabled technologies.

PARTICIPANT: Again, this is Cary. In terms of cellular TTYs or having TTY functionality in a Mobile device, right now we are looking at it in a third party type of way.

But there is a push to incorporate all these services into one device. There are some services

that ride on the date networks so that we can connect to our relay services, we can connect through instant messaging through the relay service.

But there is however no current device that uses a voice channel. And I think that is the key. That especially will help us tie into the 911 services.

Going via the data service, we cannot connect directly to 911 unless the PSAP itself accepts data connections through IP, for example. Then we would be able to connect directly.

But up to this point we have not had any devices where that's built in. So, you know, I really couldn't tell you why that's not happening, why they are not available.

And, in terms of other people with mobility disabilities or visual impairments, I really couldn't respond for them. But I do know that the sidekick is not accessible for people who have low vision because there is not audio feedback, or other types of feedback.

Maybe the keyboard is too small for some individuals to use. But there are some other phones, however, that have audio feedback, but not that one that we as the deaf community are using specifically.

MR. SNOWDEN: Thank you, Cary. Other questions from the audience? Yes, sir. If you could come to mic.

MR. CROWDER: Hi, I am Chuck Crowder out of VIA Inc. You know, I want to respond. I want to make a statement. But I think I want to make this statement more because I happen to be a citizen of the United States.

And that is that I agree that you shouldn't have regulations that punish people or get in the way, but I do think that this is so important that you do need a federal regulation to make sure that people do what they should do.

Because it's so easy for companies to say I didn't do that because of the cost. And they can use that as an excuse at every instance. So you do need federal regulation.

And I want to be very clear about that, because I don't want this notion of oh gee, you know, you're going to create a barrier, you're going to get in the way, and so I'm not going to do what's right.

And so that's my point. I want to make sure that we're very clear about that. We need to do something in this area. And it is achievable. And we need to make sure that there is a regulation that

imposes that upon corporations. Thank you.

MR. SNOWDEN: Thank you. To Echo what Bob Pepper was saying, if you would like to stay in your seat, we have a roving mic as well that if you just raise your hand we will send someone over to bring a mic to you. Yes, sir.

MR. FREDRICKSON: I have a question I would like to address to Gunnar Hellstrom.

MR. SNOWDEN: Could you state your name too, sir?

MR. FREDRICKSON: Oh, I'm sorry, apologies. Mark Fredrickson from the company MBurst. Mr. Hellstrom, I was wondering if you could -- what has been mentioned many times as the importance of connections to E911 or emergency services.

I was wondering if you can tell me, from your experience, if there are any lessons in the international community of how other countries have connected people with accessibility issues to their various emergencies.

Are there any lessons to be learned from other countries that we might adopt here?

MR. HELLSTROM: I know at least about how it's arranged in different countries, mainly for the deaf and hard-of-hearing, for the text access to

emergency services.

And I don't think that any solution is perfect. In Europe we have a strict policy that all emergency access should go through the emergency number 112.

But, if you look at the situation for text phone access, it is not done that way in many countries. Sweden does it so that the text phone goes through the regular emergency access centers where the calls are too few.

So it is a great risk that they are not handled well. Other countries like the UK have a special number that takes all text calls into one central location where they are more knowledgeable about handling text calls.

But then it's a load on the user to remember that strange, different number. Many countries do not at all have any emergency access for other than hearing voice users.

So it's not very much to learn. There has been an interesting committee in Europe called InCom, working with the regulatory recommendations for accessibility last year.

And they definitely stressed that the single-number access for text and voice and, in the

future, video users, is the goal.

MR. SNOWDEN: Thank you. Other questions? There's a hand back here.

MR. ODOM: Hi, my name is Jesse Odom from Go America. And I had a question for Paul. Paul, you and I talked one not too long ago about text over IP going through the PSTN.

And you showed the slide with all the different protocols that you are working through the ITU to get standardized. What is it going to take for the actual PSTN implementation of this so people understand what the road blocks may be in actually get some of these things through for use?

MR. JONES: Thank you. I don't think that there are any issues for the PSTN at this point. It is pretty fixed. So we look at that as a fixed network.

Everything that has to be done is on the IP side. So I think the biggest hurtle is understanding all of the various TTY types that are out there in the world.

In the United States, I guess we are fortunate, and maybe unfortunate, that we primarily have Baudot. But not only Baudot, there are actually some proprietary protocols that are also being used by

the deaf.

This is a concern. How can we bring those proprietary protocols over? We can't standardize them. This is an issue. So we are focusing on, in the standards bodies, of just Baudot at this point.

Of course, for the rest of the world, we are also focusing on every TTY type that's being used in every other country. For the U.S. it is a Baudot only focus.

So I think the hurtles are, if you speak of just the U.S., it's getting Baudot's support on the gateways to interface between the PSTN and the IP networks.

For the rest of the world it is the same thing. But it's whichever protocol is being used in each country. For manufacturers such as SYSCO, we are building gateways for deployment in every country in the world.

Of course that makes it much more difficult in that we have to focus on -- we have to be able to put the functionality into the gateway to support every one of those protocols.

And that takes time. It's actually not as easy a task as I had thought it might be when I set out working on this. But it's certainly something

that we're driving hard toward. Did that answer your question?

MR. ODOM: I think so, thanks a lot Paul.

MR. JONES: Thank you.

MR. HELLSTROM: I can add that, did you see the cloud diagram in my presentation with the IP network and the PSTN network and connected with the text and voice gateways?

That is a real network. We have it up and running. And we have been in a European project for a mobile communication for the deaf where we implemented a small gateway for text telephony into IP form of text standard.

So it's doable. And we have done it. But, of course, it needs to upscaled, and we need further projects to do things. And we have other projects going one.

The real challenge is to go into the major IP gateways to get them to understand TTY, which takes some power of their processors.

MR. SNOWDEN: We will take one more question from the back of the room here.

MS. ROSE: I'm Ms. Rose, Department of Veteran's Affairs. This is for Tom Wlodkowski from AOL. I am a line person myself, and I was assisting

another new customer to load version 9 of the AOL software on their PC.

And though I was able to do it, the installation was somewhat difficult, really would require someone with some intermediate screen reader experience.

And then we tried to use the email and found that not to be particularly accessible. So I was thinking I could possibly use another mail product that I know works better with screen reader programs.

But when I called your technical support they said this was not possible. So I was just curious to ask you is that true, or are they getting ready to put out another version of the email that would work better with the various screen readers that are out there? Thank you.

MR. WLODKOWSKI: Well thank you. Certainly you can now use other email clients to get at AOL. We just announced that last week. We have opened it up to Outlook and Outlook Express and other email clients.

WE can certainly talk offline and get that information over to you. I would also be curious to hear what the issues were with 9.0. Certainly I use the mail program as a blind user, probably

affectively.

And no others do as well. And so, perhaps there was a screen reader issue in terms of version that you were using, or what have you. But, basically our rule of thumb right now is working with the latest versions of Jaws and Window Eyes with the latest version of the AOL software.

We are furthest along with Jaws at this point. And it is still very much a collaborative effort where we retain consulting services from an organization like Freedom Scientific to literally build the customization that's necessary.

I think later this year you will actually find a product that's coming out to support our broadband initiatives. You'll also be able to use it in dialup.

That will really bring us into parody with some of the other email clients that you mentioned. And that's going to be beta here in the next four to six weeks.

And then it will release later this fall. So hopefully we can catch up offline and I would love to get you or your colleague up and running helping us test that product.

MR. SNOWDEN: Thank you Tom. One more

question.

MR. OBREY: Ronald Obrey with Hands On video relay service. I'd like the FCC to take into consideration to maybe encourage and enhance providers that are coming into the market, as far as 3G and other broadband wireless services that will enhance people that use sign language as their primary mode of communication.

So they'll have an alternative to text-based messaging. Most of the deaf people that use sign language as their primary mode of communication I think are very excited to see some of the other countries in the world have the speeds that enable wireless devices to do sign language, thank you.

MR. SNOWDEN: Thank you. We want to take a quick seven minute break so we can stay on schedule. But before we do, how about a round of applause for our panelists here. We will re-adjourn at 10:45.

(Whereupon the above-entitled matter went off the record at 10:35 a.m., and went back on the record at 10:47 a.m.)

DR. PEPPER: We heard on the first panel some of the opportunities. And we also began to hear some of the questions that are being raised about the move to IP-enabled services and Voice Over IP.

And now on the second panel we are going to focus on some of the additional challenges as a result of the shift to IP-enabled services. If we could have people move.

I think the coffee and the sweets are competing with the panel. Our first speaker is Brenda Battat, who is a long time advocate for the rights of people with disabilities.

She currently is Senior Director of Policy and Development for Self Help for the hard-of-hearing people. She's a former member of the FCC's consumer and disability telecommunications advisory committee.

She currently serves on the AT&T consumer strategies and issues council, the Northwest Airlines travelers with disabilities advisory committee has been very active. So Brenda, thank you for being here.

PANEL TWO

MS. BATTAT: Thank you very much. I am pleased to be here. The first slide I just put up to remind everybody about the need. And I think the demographics here, I just wanted to remind you about the demographics, and really to show the business imperative.

And the question whether or not it is going